



RAMBOLL

DIGITAL SERVICES COMPUTATIONAL DESIGN

Ramboll Computational Design

Computational Design is a design process that refers to the use of computing power and algorithmic thinking to generate, manipulate and explore complex geometries and structures.

Ramboll Computational Design (RCD) was launched in 2011 to help architects realise their aspirations and continue delivering engineering excellence at the highest level. At Ramboll we believe that traditional design approaches are no longer enough to tackle complex challenges and to deliver the most efficient, sustainable and high-performing solutions that have never been provided before.

Our approach

RCD is a team of dedicated specialists who use their skills in design engineering, technology and disruptive innovation mindset to provide cutting-edge engineering solutions in the areas of Buildings and Transport. In this approach our clients are the centre of everything and solutions emerge by engaging in early collaboration and exploring a vast range of design solutions sensitive to client's aspirations and requirements.

This is performed by writing our own computer scripts and automating the generation of project documentation.

New opportunities by winning together

Computational design offers great advantages to both Ramboll's clients and design teams:

- **Adaptable engineering solutions.** By nature, design engineering solutions tend to change and evolve along projects. Computational design enables coping with changes more effectively without project delays and extra costs, by automating generation of project documentation.
- **Higher engineering design value.** This approach makes it feasible to explore and evaluate a wider range of possible engineering solutions and perform more design interactions to solve complex challenges. This leads to high-performing, sustainable and unique engineering solutions.
- **Higher quality assurance.** Computational design is naturally an automated process. Hence, project documentation is more consistent than documentation produced by traditional methods.

Integration with Building Information Modelling (BIM)

Computational design scripts can be seen as add-ins to BIM software. Thus, using computational design remarkably enhances a BIM process by providing additional competences and not constraining you by standard BIM software capabilities. At Ramboll, 'Grasshopper' and 'Dynamo' are the tools used for creation of computational design scripts. Both editors offer a high interoperability with BIM software, such as Autodesk Revit and Tekla Structures.

Ramboll's experience

Ramboll has experience with computational design from small to large projects in the areas of Buildings and Transport. Continuous development and research are key to our strategy to provide Ramboll's clients with the most innovative and leading computational design techniques.

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